

The Physiological Properties of Plant Protoplasts: edited by P.-E. PILET. Springer, Berlin. 1985. xiii + 276 pp. DM 115.

This compilation by P.-E. Pilet is readily distinguishable amongst the current plethora of books devoted to plant protoplasts in that it concentrates principally upon the protoplasts themselves and not their application in other areas of research. Certainly applications are mentioned in a number of the contributions, but the main body of the book is occupied by papers concentrating on the physiological properties of the protoplasts themselves. While a book of this nature is certainly to be welcomed at this juncture, this particular volume is somewhat of a disappointment in that there are far too many contributions, each of which, with a few exceptions, is far too short. This format presumably arises from the fact that this book was based on a series of seminars organized by the editor, and, for this reason, all the contributors to the seminar series are included. While this may well be a blow for democracy, it does little to enhance the quality of the work, for it merely serves to provide the reader with tantalizing insights into a number of areas of protoplast physiology, and then leaves him/her suspended in mid air.

Apart from being broken into some 30 short contributions, further structure may be discerned in the book. There are for example groups of papers devoted to the isolation and viability of protoplasts, the properties of protoplasts *per se*, i.e. plasma membranes, vacuoles, storage compounds and mitotic division, and a further assembly of papers concentrating upon the application of protoplasts to other areas of research. These range from growth regulators, via graviperception to stomatal physiology.

Although the brevity of each contribution detracts considerably from the quality of the work, it is not to say that the book is not useful. There is a small number of contributions which are of worthwhile length, and handle their subjects very well. My personal favourites were those on the enzymes used for protoplast isolation by Fitzsimmons and Weyers, as protoplast viability by Bornman and Bornman, on membrane transport in protoplasts by Morris, on wall regeneration by Franz and Blaschek, and on gravireactivity by Iversen. Some of the other contributions are of value simply because of their uniqueness in the literature. These include the consideration of anthocyanins in protoplasts, the process of vacuolation, the nature of auxin receptors, and photo-regulation of protoplast behaviour. Also on the 'plus side' there are very few bad papers in this collection, and many authors, faced with the daunting task of compressing their work into four or five pages, have opted to present the results and literature reviews in the form of tables. These are both helpful and easy to access.

Taken overall this volume—which is not as cripplingly expensive as many German publications—occupies a unique and worthwhile place in the current literature on plant protoplasts. It certainly cannot be regarded as the Holy Grail of the subject, but will certainly serve as a very adequate starting point from which the acolytes of protoplast physiology can commence their search for the truth.

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Pakistan Encyclopaedia Planta Medica, Vol. 1. *Abelmoschus esculentus*–*Allium sativum*: edited by ATTA-UR-RAHMAN, HAKIM MOHAMMED SAID and VIQAR UDDIN AHMAD. Hamdard Foundation Press, Nazimabad, Karachi, 1986. pp. v + 373 + 31 coloured plates. US\$50.

The book is the first of a projected series of volumes dealing with the chemistry, pharmacology and indigenous medicinal uses of the plants of Pakistan. Some indication of the magnitude of the task is that according to the preface there are 217 Pakistan medicinal plants (including ferns, fungi, etc.) whose Latin names begin with the letter 'A', and the present volume contains alphabetically arranged monographs dealing with the first 94 of them.

Each monograph starts off with the Latin name of the plant (together with any synonyms), local names, plant family and occurrence in Pakistan. The bulk of the text consists of a listing of the names of the chemical constituents; a section on the pharmacological activities of the plant, its extracts and individual constituents; a section

on the uses in indigenous medicine; and finally, a numbered list of references, including *Chemical Abstracts* citations. The dates of compilation are indicated to have been between July 1982 and December 1984.

There are about 5000 references, including many repeats to the standard compilations on medicinal and useful plants not only of South Asia but also of other parts of the world (Chopra *et al.*, Nadkarni, Kirtikar and Basu, Atal and Kapur, Burkill, Petelot, Heyne, Quisumbing, Perry, Watt and Breyer-Brandwijk, etc.). Without checking the references given, it is not possible to see at a glance which uses are actually from Pakistan.

The plants selected include both introduced, e.g. *Acokanthera spectabilis* (Sond.) Hook. f. (current name *A. oblongifolia* (Hochst.) Codd) and *Agave americana* L., and cultivated ones, e.g. *Ageratum houstonianum* Mill. and *Allium cepa* L. (with 575 references).

The references cited under a species very often deal with other members of the genus or with the genus as a whole, and it requires some effort to disentangle what is known about the particular plant one is interested in. The work is

purely compilatory and it is left to the reader to correlate and evaluate the information presented in the various sections of the monographs. There are no structural formulae.

While the avowed aim is to "bring into focus those aspects of medicinal plants of Pakistan towards which . . . efforts should be directed", to the reviewer, at

least, the evident *lack* of focus in the material compiled and the way in which it is presented mean that the chief value of the work lies in its extensive citation of literature references.

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